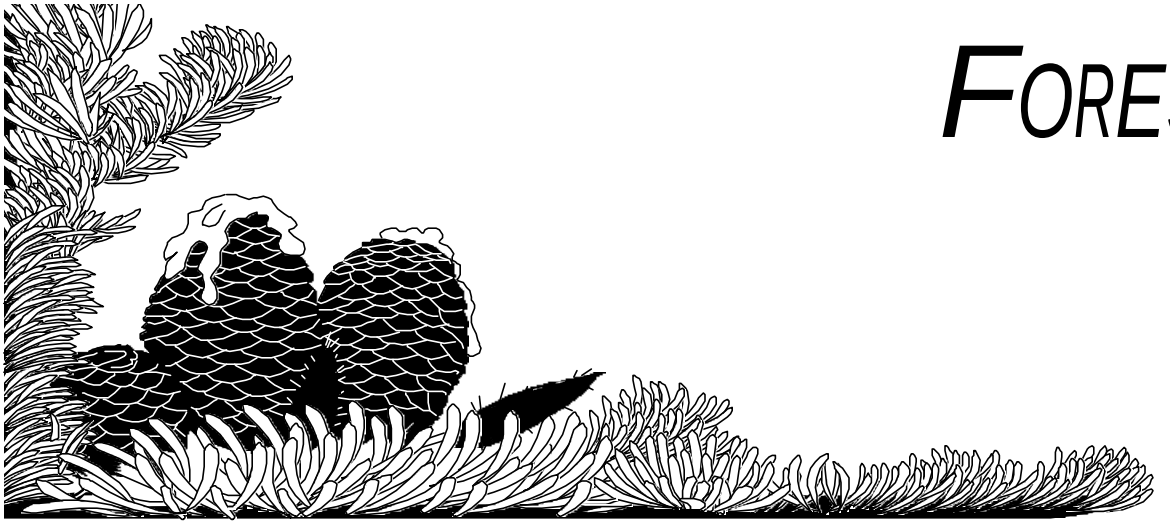

FORESTRY

LONG-TERM GOALS (15-YEAR)

Goal 1 - Reduce nutrient and sediment pollution entering Virginia's waters through full implementation of the silvicultural water quality law

Goal 2 - Maintain reduced levels of all nonpoint source pollutants to sustain designated uses and achieve beneficial uses of waters of the commonwealth by 2015

INTRODUCTION

Virginia has approximately 16 million acres of forested land (63 per cent of the state). According to the *Forest Statistics for Virginia, 1992 resource bulletin*, approximately 79 per cent of forest land in Virginia comprises hardwoods such as oak and hickory, and the remaining 21 per cent consists of softwood species such as loblolly, Virginia and white pine. Approximately 43 per cent of the average annual harvest is softwood and 57 per cent is hardwood.

The primary pollutant associated with forestry operations is sediment resulting from soil loss. Forestry activities can accelerate soil erosion, depositing sediment into state waters. High sediment concentrations can smother bottom dwelling organisms, damage aquatic plants and harm the gills of some fish species. Improper silvicultural practices can also lead to increases in water temperature due to the removal of vegetation adjacent to streams, nutrient enrichment and the introduction of toxic chemicals such as herbicides, pesticides and petroleum products.

Estimates by the Virginia Department of Forestry (DOF) staff indicate that silvicultural operations account for 5 per cent of the nonpoint source pollution affecting Virginia rivers. However, the potential for localized water quality impacts is significant where intensive forestry practices occur and best management practices (BMPs) have not been implemented. The *Virginia Nonpoint Source*

Pollution Watershed Assessment Report indicates that the pollution potential is greatest where forestry activities take place on steep slopes and highly erodible soils.

DOF is the lead state agency for the implementation of forestry nonpoint source programs. In cooperation with the forest industry, DOF has implemented an innovative forest NPS program which is supported by financial incentives such as cost-share programs. DOF NPS pollution programs stress voluntary BMPs to achieve sediment reduction and other nonpoint source pollution goals. This non-regulatory program is complemented by the Virginia Silvicultural Water Quality Law which gives DOF enforcement authority to issue stop work orders, levy fines and require corrective action to protect waters of the commonwealth from excessive sedimentation originating from forestry operations.

The basis of targeting a 40 per cent nutrient and sediment reduction goal for silvicultural activities is, in part, to support implementation of the goals established under the Chesapeake Bay Agreement and to achieve water quality benefits throughout the commonwealth. Once achieved, the reduction must be maintained and increased to the degree possible through additional efforts.

The Chesapeake Bay Local Assistance Department regulations governing tidewater localities address silvicultural operations within designated "resource protection areas" and "resource management areas." The USDA Forest Service, George Washington and Jefferson National Forests administer timber sales, reforestation and other silvicultural activities on their lands in western Virginia in full compliance with state programs.

As the lead nonpoint source pollution agency, the Department of Conservation and Recreation (DCR) works closely with DOF to coordinate nonpoint source pollution control initiatives. In particular, DCR provides grant funding for DOF program enhancement and implementation activities and works cooperatively with DOF on buffer initiatives. DOF staff are active participants in the Nonpoint source Advisory Committee and DCR staff are actively involved with the Silvicultural Water Quality Task Force.

Member companies of the American Forest and Paper Association (AF&PA) have committed to the Sustainable Forestry Initiative (SFI). This nationwide program has objectives that address nonpoint source pollution from silvicultural operations. Administration of SFI in Virginia is accomplished through the Virginia Forestry Association (VFA).

ISSUE IDENTIFICATION & PROGRAM ASSESSMENT

Timber harvesting in Virginia typically occurs only once or twice in a landowner's life since most thinning or harvesting occurs infrequently on a specific tract of forest land. As a consequence, only one percent of Virginia's forest land is harvested each year. However, land conversion to urban residential and commercial development and, in some cases, mining, highway construction or agriculture, also involves logging. It should be recognized that as land conversion occurs, affected acres convert to a different pollutant source category.

The Commonwealth of Virginia coordinates closely with the USDA Forest Service on a wide range of water quality and forest management issues. Forest Service staff are active participants in the state's Nonpoint Source Advisory Committee, and they coordinate with DOF staff on BMP development and tracking. For example, a memorandum of agreement (MOA) between USDA Forest Service and DOF is currently being developed that will help ensure coordination on forest management and water quality issues.

Additionally, Forest Service staff work closely with the Commonwealth of Virginia on development of forest plans that ensure Water Quality Standards and anti-degradation policies include provisions to remain consistent with state BMPs. Forest is managed to ensure it meets or exceeds preventative standards or BMPs.

Through the leadership of DOF and the Silvicultural Water Quality Task Force, an aggressive forestry NPS pollution program to address water quality has evolved since 1988. The primary components of Virginia's forestry NPS pollution program are listed below:

- Continued innovative leadership, training and support through the Silvicultural Water Quality Task Force established during 1988 to provide a partnership of agencies, forest industry, educators and organizations to address water quality issues relevant to forestry in Virginia;
- Enforcement of the Silvicultural Water Quality Law; *Code of Virginia* Chapter 11 of Title 10.1, article 12 §10.1-1181.1 through 10.1-1181.7, that gives the Department of Forestry the ability to stop harvesting operations, provide corrective action recommendations and impose civil fines if water quality degradation is occurring from sediment;
- DOF inspects each harvesting operation exceeding 10 acres twice to provide technical guidance for the proper implementation of BMPs and to ensure compliance with the BMP Program and the Silvicultural Water Quality Law;
- Consistent with the 1987 Chesapeake Bay Agreement, a sediment reduction goal of 40 per cent from forestry operations with interim goals of 10 per cent by 1991 and 30 per cent by 1995 were set;
- Adoption of the position that DOF's main priority is the protection of water quality and the integration of BMPs into every silvicultural activity;
- The installation of a statewide water quality monitoring program documenting the possible impacts of harvesting operations on water quality;
- A cooperative agreement between consultant foresters and DOF has established the critical importance of maintaining water quality and implementing BMPs;
- Adoption of the American Forest and Paper Association Sustainable Forestry Initiative Program to protect water quality by AF&PA members;
- Establishment of a toll-free telephone number (1-800-939-LOGS) for loggers and landowners to contact DOF for on-site assistance, logging inspections and complaints;
- Adoption in 1998 of a timber harvesting notification requirement;
- Maintenance of an aggressive and successful forestry water quality educational and training program showing the potential impact of silvicultural activities and ways to prevent erosion and subsequent sedimentation through the implementation of forestry BMPs; and
- Preharvest and BMP training are core components of SFI Program-sponsored SHARP Logger Training, which is designed to promote professionalism in logging and to improve environmental performance in harvesting operations. To date, 730 Virginia loggers, representing approximately 80 per cent of the commonwealth's timber harvest production capacity, have completed the training.

Pollution Source Activities and Source Categories

During early 1999, the Forestry Workgroup of state and federal officials, forest industry, conservation organizations and citizens was convened to assess current programs and develop the forestry NPS pollution chapter of the 1999 Virginia Nonpoint Source Pollution Management Program Update.

The workgroup determined that NPS pollution can occur through four types of forestry land use activity. Riparian restoration has been added because of new emphasis on this practice to limit NPS pollution. Leadership for the Virginia Chesapeake Bay Riparian Restoration Plan has been assigned to DOF. The five categories are listed and defined and pollutant source categories are listed in the tables on the following pages.

Harvesting

The main issues identified by the work group associated with harvesting activities are:

- Increase amount of pre-harvest planning
- Increase private sector role in pre-harvest planning
- Increase level of compliance with Silvicultural Water Quality Law
- Advance mountain logging techniques
- Use currently available technologies and logging techniques
- Current agency resources cannot address increases in forest harvesting

Pre-harvest Site Restoration

The main issues identified by the work group associated with pre-harvesting site restoration activities are:

- Proper BMP implementation during site preparation and reforestation is challenging because of the lag time following logging
- Increase BMP effectiveness in seeding, structural practices and stream crossings

Forest Maintenance

The main issues identified by the work group associated with forest maintenance activities are:

- Lack of road maintenance
- Inadequate stream crossings and water control structures
- Improper road locations
- Impacts of traffic in wet weather
- Risk of direct application of herbicides to surface waters
- Offsite sprays and their effect on streamside management zones
- Provide adequate precautions to prevent spills
- Use of herbicides in Christmas tree cultivation
- Concern for proper fire line construction and maintenance

Riparian Restoration

The main issues identified by the work group associated with riparian restoration activities are:

- Provide sufficient technical resources
- Provide financial support to riparian restoration
- Need to educate the public to increase awareness of the value of riparian restoration
- Enforce the Virginia Agricultural Stewardship Act

Land Conversion

The main issues identified by the work group associated with riparian restoration activities are:

- Improve watershed planning and use of integrated land use planning methods
- Need better financial incentives to leave forested riparian area in forest use
- Expand public awareness of the societal benefits of forested buffers
- The change in land use from forest to urban or other uses increases nonpoint source pollution loads to surface waters

DEFINITIONS OF FORESTRY ACTIVITIES BY CATEGORY	
FORESTRY ACTIVITY	DEFINITION
Harvesting	All planning and design, road, log deck and skid trail construction, and maintenance during active logging to remove wood products from the forest to a processing plant.
Post-Harvest Site Restoration	All road, deck and skid trail restoration activities, mechanical site preparation, prescribed burning to remove logging debris, and tree planting to facilitate reforestation of the logged site.
Maintenance	Maintenance includes upkeep of permanent road and trail systems, prescribed burning for fuel reduction or habitat selection and use of herbicides.
Riparian Restoration	Tree planting to restore forest buffers and associated habitat in areas immediately adjacent to streams, rivers and wetlands, to reduce pollution entering streams from adjacent land uses.
Land Conversion	Final harvest of the forest with subsequent land-use conversion to agriculture, residential or commercial development, mining or highway construction.

FORESTRY CATEGORY	POLLUTANT CATEGORY					
	Total Suspended Solids	Heavy Metals	Nutrients	Thermal	pH	Toxics
Harvesting	**T**		**T**	**T**		**T**
Post-Harvest Site Restoration	**T**					**T**
Maintenance	**T**		**T**			**T**
Riparian Restoration	**T**					**T**
Land Conversion	**T**		**T**	**T**		**T**

Existing Forestry Programs

Current program assessment was performed by the Forestry Workgroup following identification of critical issues. Subsequent drafting of objectives and supporting strategies and activities and tasks followed the five categories listed in the previous table.

Harvesting

Department of Forestry

Silvicultural Water Quality Law - *Code of Virginia* Chapter 11 of Title 10.1, article 12 §10.1-1181.1 through 10.1-1181.7

Enacted by the 1993 Virginia General Assembly with support from the forest industry, the Virginia Silvicultural Water Quality Law is the backbone of the forestry NPS pollution program. This law, which is administered through the Virginia Administrative Processes Act, allows a tiered system of inspections, special orders, compliance re-inspections and hearings to prevent NPS pollution. The law addresses sedimentation of streams. Administration of the law allows for stop-work emergency actions, provision of corrective recommendations and civil penalties where warranted.

Another process that improves BMP implementation and encourages compliance with the Silvicultural Water Quality Law, is the DOF Water Quality Complaint System. DOF and industry personnel investigate all water quality complaints involving forestry operations to document the nature of the problem. If a water quality problem can be attributed to silvicultural practices, immediate action is taken to remedy the problem. In the past, DOF has handled 8 to 15 complaints annually with 100 per cent resolution.

Through education and technical assistance programs, DOF has heightened water quality awareness among Virginia's forest industry. These programs, combined with a biannual BMP audit of 60 logged tracts, inspection of all tracts twice exceeding 10 acres and the Water Quality Complaint System, have improved compliance with the Silvicultural Water Quality Law since its inception in 1993.

BMP inspections performed by DOF personnel represent the core component of the forestry NPS program. Nearly 3,000 BMP inspections are performed annually. During a BMP inspection, timber harvesting activity is compared to acceptable standards as documented in the *Forestry Best Management Practices for Water Quality in Virginia Technical Guide.* Activities, which do not meet the standards set forth in this guide and the more comprehensive *Forestry Best Management Practices Manual*, are identified and timber harvesters are informed in writing of required corrections.

Compliance rates for BMP use has continued to improve since 1989. Moreover, the Streamside Management Zone (SMZ), vital to the maintenance of water quality, continues to be the most well-implemented BMP. To further improve BMP implementation rates, a BMP audit program has been initiated that randomly selects tracts of land for inspection.

Virginia Forest Industries

Since 1988, representative members of Virginia forest industries have participated in the Silvicultural Water Quality Task Force, which advises the state forester on water quality issues. In fact, this group has been chaired throughout its existence by a forest industry representative. The task force includes loggers, forestry consultants, academics and representatives from state environmental agencies. The task force has sponsored and supported innovative logger training, BMP demonstrations, research and legislation to address NPS pollution.

In 1994, the American Forest and Paper Association (AF&PA) developed the Sustainable Forestry Initiative Program, which member forest industries have applied to forest management on industry lands. Approximately 10 per cent of forest land in Virginia is owned by forest industry, the majority by AF&PA members. Each

member company has defined its own plans for implementation of 12 sustainability initiative objectives designed to assure that sustainable forestry is practiced on industry-owned land and to encourage other landowners to do the same. Each member organization conducts performance audits internally, and through third party audits ensure continued high compliance rates with applicable SFI Program objectives. Specifically, Sustainable Forestry Initiative Program objectives three and 10 apply to prevention and reduction of NPS pollution from all forestry operations as outlined in this plan. Objective three addresses water quality protection policy on member companies' land while objective 10 mandates an outreach program to encourage others to adopt the same policy:

SFI Objective 3

> *"Protect the water quality in streams, lakes, and other water bodies by establishing riparian protection measures based on soil type, terrain, vegetation and other applicable factors, and by using EPA-approved best management practices in all forest management operations."*

SFI Objective 10

> "*Broaden the practice of sustainable forestry by further involving nonindustrial landowners, loggers, consulting foresters and company employees who are active in wood procurement and landowner assistance programs."*

A practical outcome of objectives 3 and 10 has been the development of the *SHARP Logger Program* in Virginia, which has core and continuing education courses designed to improve BMP compliance. The program is sponsored by the Virginia Forestry Association (VFA) and features courses developed by faculty at Virginia Polytechnic Institute & State University (VPI&SU). The courses are taught by DOF, forest industry, VFA and university personnel.

USDA Forest Service, George Washington and Jefferson National Forests

The USDA Forest Service is involved in three national programs concerning management of forest land. The Forest Service administers the national forest system, which in Virginia involves management of 1.6 million acres within the George Washington and Jefferson National Forests. Located in western Virginia, these forests are administered through 10 local ranger district or recreation offices.

Through the State and Private Forestry Program, the forest service provides assistance to state governments concerning management of forest lands not included in the National Forest system. Finally, Forest Service also supports research into innovative management of forest lands. The DCR Karst Groundwater Program and the USFS are currently conducting a joint karst resource inventory of the Forest for use in updating the Forest management plan.

Forest plans for the George Washington and Jefferson National Forests contain standards that are designed to meet or exceed state BMPs for silviculture. These standards are updated as needed to stay in compliance. BMPs are applied to all forestry activities. Project planning includes an environmental assessment to estimate the effects of the project on surface water, as well as, groundwater quality and to determine BMPs needed to protect water quality. Selected BMPs are included as contract provisions for operators on Forest Service projects.

Implementation of BMPs is monitored on all forestry activities. Effectiveness of BMPs is evaluated for a range of forestry activities through water quality monitoring. Biological, chemical and physical water quality parameters are assessed. The Forest Service provides annual summaries of monitoring results to Virginia officials. If monitoring indicates that a BMP is not effective, it is modified and the situation is corrected.

Chesapeake Bay Local Assistance Department

Through its Water Quality Protection Program, the Chesapeake Bay Local Assistance Department (CBLAD) provides assistance to enforce the Virginia

Chesapeake Bay Preservation Act (CBPA – §10.1 - 2100 et seq., *Code of Virginia)* and Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20-10). CBLAD provides technical assistance, regulatory interpretations and programmatic guidance to local government officials, landowners, cooperating agencies and all other interested parties regarding the silvicultural criteria of the CBPA regulations and local ordinances.

The Chesapeake Bay Preservation Area Designation and Management Regulations (VR 173-02-01), (or Bay Act regulations), implemented through 84 local governments in the Chesapeake Bay watershed area of the coastal management zone, require all local governments in this area to adopt ordinances to control land use activities and to protect water quality.

Silvicultural operations in CBPAs that do not adhere to the DOF BMP handbook would not be considered silviculture and must comply with the local Chesapeake Bay Act ordinance land use performance criteria and buffer criteria.

CBLAD has estimated that approximately 80 per cent of all lands within tidewater Virginia have been designated as Chesapeake Bay Preservation areas. The Resource Protection Area component of the Bay Act regulations includes all perennial flowing water bodies within tidewater Virginia. Bay Act regulations do not cover the entire region as most local governments did not designate their entire jurisdiction. Preservation areas in these localities were targeted to include land types that could have the most significant impacts on water quality.

Currently, CBLAD distributes funds to tidewater soil and water conservation districts that support employment of agricultural water quality specialists to work with landowners to develop conservation plans and implement BMPs to protect water quality. The plans, called "Soil and Water Quality Conservation Plans," address sediments, nutrients, toxics and pathogens via recommended BMPs and maintenance of mandatory vegetated buffers between agricultural land uses and sensitive environmental features such as streams, rivers, wetlands, bays and swamps. Often these buffers are forested.

Virginia Cooperative Extension

Virginia Cooperative Extension (VCE) and VPI&SU are involved in forest harvesting pollution remediation through DOF in the College of Natural Resources. Such applied research and education efforts target loggers, landowners and local residents throughout the state. From a research information base that has been developed in conjunction with DOF, the USDA Forest Service, the Virginia Forestry Association and Virginia forest industries, VCE provides an ongoing educational program to inform foresters, loggers, landowners, local governments, conservation organizations and citizens of state-of-the-art silvicultural practices.

VCE disseminates research results and current information and tips through its *Newsletter to Virginia Logger*. Educational programs for identified groups regarding logging methods and BMPs to prevent NPS pollution are conducted regularly. Extension agents also conduct bi-annual local bus tours targeted to landowner, citizens, organizations and local governments that cover all aspects of proper forest management.

Department of Conservation and Recreation

Although DCR plays no direct role in managing harvesting activities, DCR does provide funding assistance for DOF program enhancement and implementation. As well, DCR maintains an ongoing nonpoint source pollution assessment process that considers pollution potential associated with harvesting activities. The DCR Karst Groundwater Program and the USFS are currently conducting a joint karst resource inventory of the Forest for use in updating the Forest management plan.

Department of Game and Inland Fisheries

The Department of Game and Inland Fisheries (DGIF) works closely with DOF to assess potential impacts of NPS on endangered and threatened species through the dissemination of biological information by our Online Service and topographical map overlays. Our Fisheries Division also assists in assessing potential impacts to

aquatic resources (e.g. trout).

Post-Harvest Site Restoration

Department of Forestry

Forestry Best Management Practices for Water Quality in Virginia encourages the use of suitable methods of site preparation and forest regeneration. These guidelines recommend mechanical planting on the contour during favorable weather conditions and discourage mechanical site preparation and planting in riparian areas. The handbook describes guidelines for eight site preparation and forest regeneration practices. It also covers wildfire reclamation and encourages the use of prescribed burning practices which protect surface waters from excessive sedimentation. Specific practices for wild fire reclamation include reforestation of bare soil and stabilization of fire lines, eroding gullies, and access roads. BMPs for prescribed burning encourage construction of fire lines along Streamside Management Zones to protect the integrity of these areas. As well, water bars and turnouts are encouraged to disperse runoff and to prevent runoff from being channeled directly into streams.

DOF provides private forest landowners with information on prescribed fire operations. In addition, the department develops and trains private contractors to provide prescribed fire services.

The Silvicultural Water Quality Law (*Code of Virginia*, Section 10.1-1181.1 *et seq.*) is administered by DOF and applies to the entire state. This law makes it unlawful to cause excessive sediment pollution to enter a stream, and it can be used to take corrective actions, levy fines or issue stop-work orders on mechanical site preparation activities which threatens water quality. The Virginia Seed Tree Law §10.1 - 1163, *et seq*. of the *Code of Virginia*, administered by DOF, requires that a preharvest plan be prepared and approved by the state forester or that a forest operation be subject to the requirement that eight cone-bearing trees with a minimum 14-inch diameter be preserved. This law may also require an alternate management plan to address reforestation for pine tracts harvested in Virginia.

DOF administers several programs that provide financial assistance to stabilize logging roads. These programs include the Reforestation of Timberlands Program, Federal Agricultural Conservation Program and the Forestry Incentive Program. The Reforestation of Timberlands Program will cost-share log road stabilization if the road is within the boundary for the approved Reforestation of Timberlands Program project.

Chesapeake Bay Local Assistance Department

Silvicultural operations in Chesapeake Bay Preservation Areas that do not adhere to DOF BMP handbook must comply with the local CBPA ordinance requirements. Local ordinances require a 100-foot wide vegetative buffer area along all tidal wetlands, tidal shores, tributary streams and nontidal wetlands connected by surface flow and contiguous to the other features (Resource Protection Areas). Site preparation activities are prohibited in the SMZ. If site preparation occurs in the SMZ it would be considered a CBPA buffer area violation and revegetation of the full 100-foot wide CBPA buffer area and any associated wetland would be required.

USDA Forest Service George Washington and Jefferson National Forests

Forest plan standards include use of BMPs in all site preparation and reforestation activities that must meet or exceed state BMP standards. Standards of management during logging and restoration and closure of forest roads, skid trails and log decks are stipulated in all contracts with loggers and reforestation contractors. The Forest Service is developing a national policy that will provide for road closing and obliteration of unnecessary roads. Once developed, this policy will be in effect on all Virginia national forest lands.

In addition to the applicable state programs, the George

Washington and Jefferson National Forest staff meet annually with their timber purchasers and contractors for training, information exchange and clarification of road specifications.

Staff require the logging contractors to maintain temporary roads in compliance with the Forest Service road operation specifications. These requirements are administered through timber harvest contracts. The George Washington and Jefferson National Forest often uses roads constructed as a result of timber harvest for continued access for recreation, wildlife management, hunting, fishing and forest management throughout the life of the next stand of timber. Roads are maintained to strict standards and specifications outlined in USDA Forest Service manuals. The George Washington and Jefferson National Forest staff meet annually with loggers and contractors for training, information exchange and clarification of road specifications, including maintenance. Within the George Washington and Jefferson National Forest, revegetation of disturbed areas is required of all silvicultural operations in accordance with Forest Service policies.

Forest Industry

The Sustainable Forestry Initiative Program addresses site preparation and reforestation through the following objective:

> *Promptly reforest harvested areas to ensure long-term forest productivity and conservation of forest resources.*

AF&PA members must report annually to the national office any acres not regenerated within two years of harvest.

USDA Natural Resource Conservation Service

The USDA Natural Resource Conservation Service (NRCS) and its sister agency, the Farm Services Agency (FSA) support site preparation and reforestation through several cost-share programs that require conservation plans that include BMPs to protect surface waters. In addition, the NRCS operates Conservation Plant Material Centers where research and demonstrations are conducted to provide adaptive, native plants for restoration purposes.

NRCS and FSA administer several programs that provide cost-share assistance for reforestation and conservation practices. These programs require a conservation plan that includes BMPs for all site preparation and reforestation practices. Available programs include the Environmental Incentives program (EQIP), Conservation Planning Technical Assistance (CTA), Conservation Reserve Program (CRP), Forestry Incentive Program (FIP) and Small Watershed program (PL566).

Department of Conservation and Recreation

The Department of Conservation and Recreation (DCR) supported development, printing and distribution of the *Forestry Best Management Practices for Water Quality in Virginia Technical Guide* through funding and technical support. The department also manages the Virginia Agricultural BMP Cost-Share Program, administered through soil and water conservation districts, that provides assistance to landowners for log road stabilization practices such as grading and vegetative stabilization.

Forest Maintenance

Department of Forestry

The *Forestry Best Management Practices for Water Quality in Virginia* handbook provides guidelines for road and trail maintenance following reforestation activities where continued access to the property is necessary.

The handbook encourages proper planning and application of pesticides to protect surface waters. BMPs emphasize spraying techniques to prevent direct application or drift of pesticides to surface waters, wetlands and other environmentally sensitive resources. As well, it recommends strict adherence to label directions for application of chemicals and disposal of containers. Persons who apply chemicals are specifically encouraged to consider proximity to surface waters.

DOF administers an aerial spraying program which is used for site preparation and to manage competition between softwoods, hardwoods, and herbaceous vegetation on young pine plantations. DOF staff manage contracts with persons who perform aerial spraying and are trained and certified in commercial application of pesticides. This training helps ensure that pesticide application is conducted in a manner which minimizes impacts to surface waters.

Virginia Department of Agriculture and Consumer Services

The Virginia Pesticide Control Act (Sec. 3.1-249.27, *et seq.* of the *Code of Virginia*) and the regulations promulgated under its authority have the effect of implementing in Virginia the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) as well as providing to the Virginia Pesticide Control Board (Board) additional powers relating to regulating pesticide use. Under the authority of the act and FIFRA, the board has promulgated regulations establishing certain mandatory programs, including Pesticide Applicator Certification and Pesticide Business Licensing, as well as establishing voluntary programs such as the Pesticide Disposal Program and the Pesticide Container Recycling Program. Under the authority of FIFRA and in agreement with EPA, the board's staff will enforce the Worker Protection Standard and develop pesticide management plans for groundwater when required. Collectively, these programs regulate how pesticides will be used in the state by enforcing the federal label requirements and Worker Protection Standard, and requiring training and licensing of individuals and businesses that apply pesticides. In addition, the Certification and Licensing Programs assure that pesticide users will have appropriate training, provided in cooperation with Virginia Cooperative Extension (VCE) on the principals and practice of Integrated Pest Management.

Virginia regulations require that application equipment be in good working order and properly calibrated. Furthermore, these regulations require the use of backflow preventers to protect water supply systems, lakes or other sources of water. Violation of these regulations triggers enforcement under the authority of the act.

Violations of the Virginia Pesticide Control Act can result in revocation or suspension of licenses and/or assessment of penalties. Enforcement is administered through 10 regional offices with investigation staffs. Unannounced, random field inspections of pesticide applications are used to enforce the Virginia Pesticide Control Act.

USDA Forest Service George Washington and Jefferson National Forest

Forest plan standards include the use of BMPs in all herbicide application practices. These standards must meet or exceed state BMP standards and such standards are stipulated in all contracts. The Forest Service is developing a national road policy that will provide for improved maintenance standards of all designated permanent roads within the national forest system. Once developed, the policy will apply to all roads on the George Washington and Jefferson National Forests.

Riparian Buffers

Department of Forestry

The Department of Forestry led the governor's effort to develop the *Commonwealth of Virginia Riparian Buffer Implementation Plan.* DOF provides staff support to the Virginia Riparian Buffer Work Group, which is charged with implementing the plan. The plan outlines six objectives and subsequent strategies to support Virginia's commitment to restore 610 miles of riparian forested buffers within the Chesapeake Bay watershed. In addition, at least 300 additional miles of restoration are sought in the state's Southern Rivers Watershed.

Commonwealth of Virginia
Riparian Buffer Implementation Plan
Objectives:

- Restore missing or inadequate buffers;
- Conserve existing riparian buffers;

- Enhance program coordination and accountability;
- Enhance incentives;
- Promote education and outreach; and
- Target, conduct and track research.

A multi-agency Riparian Buffer Work Group, appointed by the Secretary of Natural Resources is responsible for implementation of set strategies to achieve the plan's objectives.

Department of Conservation and Recreation

As Virginia's lead nonpoint source pollution agency, DCR plays a central role in riparian buffer protection, establishment, and restoration. Specifically, DCR provides financial and technical support for buffer area establishment and streambank and shoreline restoration.

DCR's Virginia Agricultural BMP Cost-Share Program and the Conservation Reserve Enhancement Program (CREP) support landowner installation of riparian buffers. In addition, the department sponsored a series of introductory and advanced riparian restoration and stream stability workshops throughout the Commonwealth from 1995 through 1998. Technical recommendations on streambank restoration on non-tidal and tidal waters is available from department engineers.

The Conservation Reserve Enhancement Program (CREP) is a cooperative effort between the Commonwealth of Virginia and the United States Department of Agriculture to enhance the water quality and the fisheries and wildlife habitat within two targeted watersheds; the Chesapeake Bay and the Southern Rivers Watershed which is outside the bay area of Virginia. The overall goal of the program is to implement water quality improvement practices on 35,000 acres within Virginia.

Chesapeake Bay Local Assistance Department

The Chesapeake Bay Preservation Area (CBPA) Designation and Management Regulations (VR 173-02-01), implemented through 84 local governments in the Chesapeake Bay watershed area of the coastal management zone, require all local governments in this area to adopt ordinances to control land use activities and to protect water quality.

CBLAD has estimated that approximately 80 per cent of all lands within Tidewater, Virginia have been designated as CBPA. The Resource Protection Area component of CBPAs includes all perennial flowing water bodies within tidewater Virginia. CBPAs do not cover the entire region as most local governments did not designate their entire jurisdiction.

Currently, CBLAD distributes funds to soil and water conservation districts in Tidewater Virginia that support employment of agricultural water quality specialists to work with landowners to develop conservation plans and implement BMPs to protect water quality. The plans, called "Soil and Water Quality Conservation Plans" address sediments, nutrients, toxics and pathogens via recommended BMPs and maintenance of mandatory vegetated buffers between agricultural land uses and sensitive environmental features such as streams, rivers, wetlands, bays and swamps. Often, these buffers are forested.

USDA Forest Service George Washington and Jefferson National Forest

The Forest Service has participated in the Chesapeake Bay Program's riparian buffer efforts. Opportunities for riparian buffer reforestation on Virginia national forests have been inventoried and riparian forest buffers are being established as resources and funding allow.

George Washington and Jefferson National Forest designates all streamside areas and wetlands for special manage-ment considerations under a "Streamside Area Management" policy. To protect streamside zones, the George Washington and Jefferson National Forest staff designate all riparian management areas in management plans and timber sale contracts. Sales contracts are used to specify conditions of logging operations in streamside management areas.

USDA Natural Resource Conservation Service (NRCS)

NRCS and the Farm Services Agency have been encouraging riparian buffer restoration since 1995 through Food Security Act cost-share programs. Currently, the Conservation Reserve Program (CRP) enables landowners to receive cost-share payments for establishment of grass and riparian buffers on highly erodible agricultural lands. Landowners also receive a rental payment for a contracted period of time.
During 1998, NRCS partnered with the DCR to develop the Conservation Reserve Enhancement Program which mirrors CRP but focuses only on establishment of forest or grass buffers and wetland restoration. In addition, cost-share and rental payments will be supplemented through state funds, and an easement option entirely supported through the Water Quality Improvement Fund is available for designation of permanent conservation easements. The program, administered by NRCS and DCR through an advisory committee of conservation federal and state agencies as well as conservation organizations, will be available to landowners from mid-1999 through 2004.

Conservation Organizations

Conservation organizations such as the Chesapeake Bay Foundation, Trout Unlimited, Inc. and Ducks Unlimited, Inc., along with the Izaak Walton League of America and river organizations, have sponsored local riparian restoration demonstration projects, restoration seminars and conservation easements.

Forest Industry

The Sustainable Forestry Initiative Program addresses riparian protection and restoration and reforestation through the following objectives:

SFI Objective 3

> *"Protect the water quality in streams, lakes, and other water bodies by establishing riparian protection measures based on soil type, terrain, vegetation and other applicable factors, and by using EPA-approved best management practices in all forest management operations."*

SFI Objective 11

> *Enhance the quality of wildlife habitat by developing and implementing measures that promote habitat diversity and the conservation of plant material and animal populations found in forest communities.*

Department of Game and Inland Fisheries

The DGIF Forest Stewardship program assists landowners in riparian restoration, and the Nongame Wildlife Program provides technical assistance for stream restoration projects via Partners for Wildlife.

Land Conversion from Forest to Other Uses

Virginia Department of Taxation

The Virginia Department of Taxation administers the Virginia Land-use Assessment Law (Sec. 58.1-3229 *et seq.* of the *Code of Virginia*) which enables local governments to adopt a land-use taxation option. This provides a reduction in property tax for participating landowners. A forest management plan, including a harvest plan, is required for the landowner to receive this tax reduction. This program is overseen by the State Land-use Evaluation Advisory Council, and is administered by local governments. This tax incentive encourages sustainability of the forest resource.

Local Governments

Local governments not only can authorize use value taxation for forested areas, but can extend the option to riparian area and wetlands protection. This option was provided by the Virginia General Assembly during 1997 through amendment of §58.1-3230 of *The Code of Virginia* through introduction of §58.1- 3665. The 1998 General Assembly added a provision for restoration of

local tax revenues from the Virginia Water Quality Improvement Fund.

Forest Industry

The Sustainable Forestry Initiative Program considers maintenance of the forest land base through objectives six and 12:

> *Manage company lands of ecologic, geologic or historical significance in a manner that accounts for their special qualities.*
>
> *Provide opportunities for the public and the forestry community to participate in the AF&PA membership's commitment to sustainable forestry.*

By reserving "special places" on industry lands, and encouraging others in stewardship, forest industry is acting to preserve Virginia's natural and historic heritage.

OBJECTIVES (SHORT-TERM GOALS)

Five objectives were developed by the state's Forestry Workgroup to address the NPS pollutant categories and the critical issues that were subsequently identified. Objectives were developed to address critical issues and are targeted to those activities not subject to current water quality and wetland permit requirements and regulations. This approach considered and addressed all potential NPS pollution and riparian habitat considerations.

Objective 1. Reduce nonpoint source pollution from all harvesting activities throughout Virginia to maintain acceptable water quality and habitat

Objective 2. Ensure prompt reforestation and site stabilization using all applicable BMPs following harvest

Objective 3. Apply state-of-the-art BMPs to maintained forest roads and maintain applicable standards and procedures in the use of pesticides and fire used in silvicultural operations

Objective 4. Support Chesapeake Bay Program Riparian Forest Buffer Directive through the establishment of at least 610 miles of riparian forest buffer by 2010 within the bay watershed and target riparian restoration throughout Virginia's river corridors

Objective 5. Foster local partnerships, ordinances and innovative strategies to conserve forest lands critical to water resources, wildlife habitat, sustainable forest industries and local communities

TABLES OF OBJECTIVES & STRATEGIES

The objectives, strategies and related tasks presented in this section reflect a five-year planning cycle (through 2005). The objectives were formed following a detailed listing of critical forestry NPS pollution issues and subsequent analysis of current programs. Emphasis in developing the five-year plan was on continuing crucial ongoing activities that will be evaluated annually. Some activities by their very nature are "ongoing" and will continue indefinitely. These ongoing activities are presumed to be supported through maintenance of current funding levels.

In addition, related tasks to address critical forestry NPS pollution issues have been included. Some of these new activities can be accomplished through the support of the forestry community without specific new funding sources. Others will require new funding through the §319 program, the Silvicultural Water Quality Law Enforcement Fund or other funding sources. (For additional strategies, objectives, and tasks regarding implementation of forestry management measures in the coastal zone refer to Chapter XIII Coastal Nonpoint Source Pollution Control Program.)

Harvesting

OBJECTIVE 1				
Reduce nonpoint source pollution from all harvesting activities throughout Virginia to maintain acceptable water quality and habitat				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCE**
1.1 Refine pre-harvest planning procedures to increase landowner and logger participation	Evaluate US Forest Service pre-harvest planning procedures as to technical applicability to pre-harvest planning on private lands	•DOF & •VCE with •George Washing-ton & Jefferson National Forest staff	2001	•Current levels adequate
	Explore technical transfer mechanisms, training and demonstrations			
	AF&PA forest industries will accept roundwood (primary) delivered only by *SHARP Loggers*	•Member AF&PA Virginia forest industries	2001	•Industry funding adequate
	Develop strategy for <u>all</u> wood (primary & secondary) to be delivered to AF&PA industries through *SHARP Loggers* program	•Member AF&PA Virginia forest industries	2002	•Industry funding adequate
	Develop sediment delivery estimate protocol as component of preharvest planning for sensitive sites	•USFS •DOF •DCR-Div. Of Natural Heritage	2002	•Addition-al funding required, will target §319
	Develop and implement a pre-harvest plan for landowners to qualify for reforestation cost-share funds	•DOF	2003	•Current levels of funding adequate

OBJECTIVE 1				
Reduce nonpoint source pollution from all harvesting activities throughout Virginia to maintain acceptable water quality and habitat				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCE**
1.1 (Cont.) Refine pre-harvest planning procedures to increase landowner and logger participation	Develop an expanded pre-harvest planning course as a continuing education option in the Sharp Logger Program	•Forest Industry •VCE •DOF •VFA	2001	•Industry funding adequate
1.2. Evaluate and amend if necessary the Silvicultural Water Quality Law to streamline enforcement procedures	Assign evaluation of enforcement process to a sub-committee of the Silvicultural Water Quality Task Force	•Silvicul-tural WQTF	2000-2001	•Current funding adequate
	Introduce applicable legislation to amend Silvicultural Water Quality Law	•Silvicultur al WQTF	2001	•Current funding adequate
1.3 Maintain state-of-the-art logger training program	Evaluate current training program effectiveness using a logger focus group	•VCE •DOF •Forest industry •VFA Logger's Council	2000-2001	•Current funding adequate
	Provide technical support to loggers and landowners through refined training program, newsletters and on-site consultations	•DOF •VCE •VFA Logger's Council	Ongoing	•Industry funding adequate
	Ensure continued availability of *SHARP Logger* training program to all interested loggers and foresters	•DOF •Forest Industry •VCE	Ongoing	•Industry funding adequate

OBJECTIVE 1				
Reduce nonpoint source pollution from all harvesting activities throughout Virginia to maintain acceptable water quality and habitat				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCE**
1.3 (Cont.) Maintain state-of-the-art logger training program	Continue *Mountain Logging Symposium* annually to focus on critical area and steep site logging BMP methods	•VCE •DOF	Annually	•Current funding through Silvicultural Water Quality Law Enforcement Fund
	Provide intensive preharvest planning, hydrology and civil engineering training and support to DOF Water Resources Team	•DOF	Annually	•$10,000 annually through 2005 through General Fund or SWQLE Fund
1.4 Support alternative logging methods to reduce NPS pollution impacts on water resources	Demonstrate cable logging, helicopter systems and other low impact systems applicable to mountain terrain	•DOF •VCE •USFS	Continuous	•Cooperative funding through USFS
	Demonstrate low impact logging methods for use in wet season logging in the Coastal Plain and on other sensitive sites	•DOF •DCR •VCE •CBF •Forest Industry	•Continuous	•Current Silvicultural Water Quality Law EnforcementFund
	Develop adaptive BMPs to protect tier III waters and sensitive wildlife habitats	•DOF •USFS •DCR Div. Natural Heritage	2001	•Current funding levels adequate

Post-harvest Site Restoration

OBJECTIVE 2				
Ensure prompt reforestation and site stabilization using all applicable BMPs following harvest				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCES**
2.1 Continue Silvicultural Water Quality Law enforcement timing through the final inspection process to minimize water quality degradation	Continue 24-hour response to complaints and toll-free hotline	•DOF	Ongoing	•Current funding levels adequate
	Use DOF three standard criteria for automatic enforcement action through final inspection process	•DOF	Annually	•Current funding adequate
	Continue bi-annual compliance audits to assess BMP effectiveness and Silvicultural Water Quality Law compliance. (60 tracts annually)	•DOF •VCE •Forest Industry •Consul-ting Foresters	Annually	•Current funding adequate
	Use bi-annual audits to refine and target training emphasis each year	•DOF •VCE •VFA	Annually	•Current funding adequate

OBJECTIVE 2				
Ensure prompt reforestation and site stabilization using all applicable BMPs following harvest				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCES**
2.2. Continue emphasis of AF&PA Sustainable Forestry Initiative Program Objective 10	Increase landowner short course offerings and participation through program evaluation and marketing	•VFA •VCE	2001	•Additional funding necessary through forest industry, 319 or SWQLE Fund
	Develop cooperative sub-committee of the Silvicultural Water Quality Task Force to mutually assess forest industry and DOF compliance audits to promote improvement of BMP implementation	•AF&PA Forest Industry •VCE •WQTF	2001	•Current funding adequate

Forest Maintenance

OBJECTIVE 3				
Apply state-of-the art Best Management Practices to maintained forest roads and maintain applicable standards and procedures in the use of pesticides and fire used in silvicultural operations.				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCES**
3.1 Examine US Forest Service road retirement policy and make applicable recommendations for use on private and industrial forest lands in Virginia	Assign sub-committee of Silvicultural Water Quality Task Force to accomplish this objective	•USFS Silvicultural Water Quality Task Force	2001	•Current funding adequate
	Establish demonstration areas and incorporate new recommendations into *SHARP Logger* training	•Forest Industry •DOF •VFA Logger's Council	2002 - 2004	•Additional 319 funding necessary - $10,000 per new demonstration
3.2.Maintain applicable standards and procedures for use of herbicides	Through the Virginia Christmas Tree Growers Association, provide training, fact sheets and herbicide applicator information	•VCE •VA Christmas Tree Grower's Assoc. •VDACS	2001	
	Maintain stringent DOF herbicide application program through annual contracts, training, and pesticide applicator certification for DOF nursery and contracted aerial program (site prep and aerial release)	•DOF •VDACS •Forest Industry	Annually	•Current funding adequate

OBJECTIVE 3				
Apply state-of-the art Best Management Practices to maintained forest roads and maintain applicable standards and procedures in the use of pesticides and fire used in silvicultural operations.				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCES**
3.3. Improve DOF prescribed burning protocols to ensure public safety and reduce impacts to water quality	Appoint task force to refine prescribed burning procedures	•DOF •DCR, Natural Heritage •Forest Industry	2001	•Current funding adequate
	Provide training to certify all prescribed burning agency, industry and consulting staffs	•DOF	2002-2004 ongoing thereafter	•Current funding adequate
3.4 Continue efforts to prevent petroleum product spills on log decks, helicopter landings and prescribed burning sites	Pursue MOA between DOF and DEQ to address spillage prevention and mitigation	•DOF •DEQ	2001	•Current funding adequate
	Incorporate preventive and mitigative measures into *SHARP Logger*, agency and consultants training	•DOF •DEQ •VFA •DGIF	2002	•$5000 for new training module through 319, SWQLE Fund, forest industry
	Develop adaptive BMPs to protect tier III waters and sensitive aquatic habitats	•DOF •WQTF •USFS •DEQ •DCR Div. Natural Heritage	2002	•$15,000 new funding; 319, USFS

Riparian Restoration

OBJECTIVE 4				
Support Chesapeake Bay Program Riparian Forest Buffer Directive through the establishment of at least 610 miles of riparian forest buffer by 2010 within the bay watershed and target riparian restoration throughout Virginia's river corridors.				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCES**
4.1 Provide public education to increase awareness of the value of riparian restoration	Initiate major public relations campaign with American Forestry Association	•DOF •DCR •DGIF •American Forestry Assoc.	2001	•American Forestry Assoc. partnership
	Promote riparian restoration in watershed restoration action strategies developed for Virginia watersheds	•DOF/ •DCR •VA SWCD •DGIF	2001	•Current levels adequate
	Increase demonstration areas in each Virginia watershed	•DOF •DGIF	2001	•$50,000 through Bay NPS Implementation Program, CZARA, 319

OBJECTIVE 4				
Support Chesapeake Bay Program Riparian Forest Buffer Directive through the establishment of at least 610 miles of riparian forest buffer by 2010 within the bay watershed and target riparian restoration throughout Virginia's river corridors.				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCES**
	Develop short-course in riparian values and restoration within landowner short course series	•VFA •VCE •DGIF	2002	•Current levels adequate for technical support, $10,000 for training materials through CZARA, Bay NPS Imple-mentation Program
4.2 Allocate resources to meet riparian restoration targeted goals	Finalize and implement CREP MOU	•DCR •DGIF •Farm Services Agency	1999	•CREP
	Assure funding for CREP, Virginia Agricultural BMP Cost-Share Program and other state cost-share and grant programs	•DCR •DOF •NRCS •FSA •DGIF	Annually through 2004	•WQIF
	Provide restoration and marketing training to natural resource professionals to implement Conservation Reserve Enhancement Program and other restoration initiatives	•DCR •DOF •DGIF •NRCS •CBF •Ducks Unlimited	Annually through 2005	•CREP

OBJECTIVE 4				
Support Chesapeake Bay Program Riparian Forest Buffer Directive through the establishment of at least 610 miles of riparian forest buffer by 2010 within the bay watershed and target riparian restoration throughout Virginia's river corridors.				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCES**
	Provide continued technical support to challenging restoration projects through interdisciplinary agency support (hydrology, soils, civil engineering)	•DOF Water Resources Team •DCR •DGIF •Virginia Riparian Buffer Work Group •Consulting engineers •Conservation agencies & orgs	Ongoing through 2005	•Maintenance of technical staff support is required. Some increase in technical staff may be necessary.
4.3 Enforce the Virginia Agricultural Stewardship Act and Chesapeake Bay Preservation Area Designation and Management Regulations local ordinances (Bay Act regulations)	Provide consistent enforcement across soil and water conservation districts of the Virginia Agricultural Stewardship Act to promote the use of riparian buffers on farms to mitigate sediment and nutrient NPS pollution	•VDACS •SWCDs •CBLAD •DGIF	Ongoing	•Current funding levels
	Continue consistent use of Chesapeake Bay Preservation Areas and Chesapeake Bay Management Areas in all coastal localities to protect riparian buffers	•CBLAD •Tidewater localities	Ongoing	•Current funding levels

Land Conversion

OBJECTIVE 5				
Foster local partnerships, ordinances and innovative strategies to conserve forest lands critical to water resources, wildlife habitat, sustainable forest industries and local communities				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCES**
5.1 Expand incentives to landowners electing to maintain riparian areas in forest use	Encourage localities to adopt the riparian buffer local land use taxation option	•DOF •DCR •Conservation Organizations •Virginia Outdoors Found.	Ongoing	•WQIF may reimburse localities for lost revenues

OBJECTIVE 5				
Foster local partnerships, ordinances and innovative strategies to conserve forest lands critical to water resources, wildlife habitat, sustainable forest industries and local communities				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCES**
	Fully implement Conservation Reserve Enhancement Program (CREP) conservation easement option and other conservation easement programs	•DCR •DOF •NRCS •Virginia Outdoors Found.	Through 2004	•CREP •General Fund •Increased private funds
	Implement "enhance incentives" objective of the Commonwealth of Virginia Riparian Buffer Implementation Plan	•Virginia Riparian Buffer Work Group	Through 2010	
5.2. Seek maintenance of a sustainable forest resource through partnerships with local governments, business and communities	Explore governmental incentives for industrial stewardship	•Virginia Urban Forestry Council •VA Municipal League •VA Assoc. of Counties	Through 2005	
	Promote the economic and environmental benefits of Green Building practices and Sustainable Community Design	•Virginia Urban Forestry Council	Ongoing	
5.2 (Cont.) Seek maintenance of a sustainable forest resource through partnerships with local governments, business and communities	Support and conduct conference on forest protection, sustainability and innovative growth policies targeted to localities, developers, conservation organizations and community groups	•Virginia Urban Forestry Council	2002	•Conference registration fees and sponsorships

OBJECTIVE 5				
Foster local partnerships, ordinances and innovative strategies to conserve forest lands critical to water resources, wildlife habitat, sustainable forest industries and local communities				
STRATEGIES	**RELATED TASKS**	**AGENCIES & OTHERS**	**TARGET YEAR**	**FUNDING SOURCES**
5.3 Reduce impact of land clearing for development, agriculture, mining and transportation	Create workgroup of urban development, forestry and agriculture interests to develop and promote the use of BMPs in land clearing activities involving permanent land-use change	•DOF •DCR •CBLAD •NRCS	2004	•Current funding adequate
	Fully use authorities of Chesapeake Bay Preservation Area ordinances, conservation easements and other techniques to maintain forests adjacent to streams, rivers, wetlands and sensitive habitats	•DOF •DCR •CBLAD •Local govern-ments	Ongoing	•Current funding levels adequate
	Develop guidelines for communities to maintain sustainable forest resources for water quality. Distribute and promote.	•DOF •DCR •DEQ •Local govern-ments	2004	•Addi-tional $50,000 319, bay, CZARA to produce, print and distribute
	Promote the economic and environmental benefits of the Powell River Project's research on reforestation and forest land uses of surface mined lands	•VPI&SU	Ongoing	•Increase current funding by $10,000 - $25,000 annually

WORK GROUP MEMBERS & AGENCY/ORGANIZATION REPRESENTED

Forestry

Department of Conservation & Recreation Facilitator:
Ms. Deborah Mills
Nonpoint Source Program Manager:
Mr. Rick Hill

Mr. Harry Augustine
Department Of Environmental Quality

Mr. Wayne Barfield
Westvaco Appalachian Woodlands

Mr. Tom Davenport
Cherokee Forest Voices

Mr. Mike Foreman
Department of Forestry

Dr. Greg Garman
Virginia Commonwealth University

Mr. Jay Gentry
Virginia Council Trout Unlimited

Mr. Jay Gilliam
Izaak Walton League of America/Save Our Streams

Mr. Samuel Hamilton
Virginia Agribusiness Council

Mr. Kirk Havens
Virginia Institute of Marine Science

Mr. Paul Howe
Virginia Forestry Association

Ms. Ann Jennings
Chesapeake Bay Foundation

Mr. Munroe Jones
Union Camp Corporation

Ms. Ginger Kopp
Natural Resources Conservation Service

Mr. Rick Parrish
Southern Environmental Law Center

Mr. Richard Patton
U.S. Forest Service

Ms. Sarah Pugh
Virginia Department of Agriculture & Consumer Services

Mrs. Donna Pugh-Johnson
Virginia Agribusiness Council

Mr. Bob Radspinner
Resource Forester-Environmental Georgia Pacific

Mr. Willy Reay
Virginia Institute of Marine Science

Mr. Tom Reeder, Jr.
The Glatfelter Pulp Wood Co.

Dr. Gerry Rozan

Mr. Bill Saunders
Department of Forestry

Mr. David Sausville, Jr.
Ducks Unlimited, Inc.

Dr. Robert Shaffer
Virginia Polytechnic Institute & State University

Mr. Mark Slauter
Department Of Conservation & Recreation

Mr. Wilmer Stoneman
Virginia Farm Bureau Federation

Mr. Hugo Valverde
Hampton Roads Planning District Commission

Mr. Charlie Wade
Shenandoah Watershed Manager

Mr. Ron Wood
Chesapeake Bay Local Assistance Department